

AMBULATORY APPARATUS AND METHOD OF MANUFACTURE THEREOF

Invented by

Susan Opalka

a resident of

16625 North 5th Avenue
Phoenix, Arizona 85023

and

Roger Lindholm

a resident of

8317 East Sells Drive
Scottsdale, Arizona 85251-2818

both citizens of
the United States

1 AMBULATORY APPARATUS AND METHOD OF MANUFACTURE THEREOF

2
3
4 CROSS-REFERENCE TO RELATED APPLICATIONS

5
6 This application claims the benefit of Provisional
7 Application Serial Number 60/183,565, filed 18 February
8 2000.

9
10 Field of the Invention

11
12 This invention concerns apparatus for supporting and
13 assisting physically challenged users for going on foot and
14 associated methods of manufacture.

15
16 Background of the Invention

17
18 The prior art is replete with ambulatory devices that
19 are designed to support and assist physically challenged
20 users in walking, exercise or otherwise going on foot.
21 Among the vast array of ambulatory devices, walkers and
22 canes remain the most fundamental means of helping people
23 move about their homes and communities and for helping
24 patients move about hospitals and for helping the elderly

1 move about nursing homes and other places. Although
2 walkers and canes are notoriously known, relatively little
3 attention has been directed toward improving not only the
4 construction of walkers and canes but also associated
5 manufacturing methods.

6
7 Thus, there is a need for improved ambulatory
8 apparatus for supporting physically challenged users in
9 going on foot having removable and replaceable decorative
10 features and that may be provided in the form of a kit of
11 component parts and decorative features that are capable of
12 being assembled.

Summary of the Invention

The above problems and others are at least partially solved and the above purposes and others realized in new and improved ambulatory apparatus for aiding a user in going on foot. In an exemplary embodiment, the invention provides ambulatory apparatus, which is comprised of a framework including opposing footed and handled ends and decorative filling held within at least one attached and exposed transparent receptacle. The framework includes pivotally attached forward and rearward legs and the handled end includes at least one handle, which is preferably angled toward the footed end. The filling is loose in the present embodiment, and may comprise one or more of toys, candy, decorative fabric, artificial flowers, golf balls, coins, beads and miniature figurines, etc.

In another embodiment, the invention provides ambulatory apparatus, which is comprised of transparent receptacles having opposing upper and lower ends, handled structure supported by the upper ends, feet each carried by one of the lower ends and decorative filling contained by the receptacles between the upper and lower ends. The handled structure comprises opposing handles, which are

1 angled toward the lower ends. The filling is loose in this
2 embodiment and comprises one or more of tees, candy,
3 decorative fabric, artificial flowers, golf balls, coins,
4 beads and miniature figurines, etc.

5
6 In yet another embodiment, the invention provides
7 ambulatory apparatus, which is comprised of a framework
8 having at least one opening or window, opposing footed and
9 handled ends and at least one removably attached decorative
10 element, which is visible through the window. The handled
11 end preferably includes opposing handles, which are angled
12 toward the footed end, which may be wheeled for providing
13 wheeled movement. In this embodiment, the framework
14 includes pivotally attached forward and rearward legs and
15 is equipped with an attached storage bin.

16
17 In still another embodiment, the invention proposes a
18 kit of component parts capable of being assembled into a
19 device for aiding a user in going on foot comprising a
20 combination of decorative elements and a framework having
21 windows and opposing footed and handled ends and adapted to
22 removably accommodate each of the decorative elements so
23 that they may be viewed through the windows. In this
24 embodiment, the handled end comprises opposing handles,

1 which are directed toward the footed end, which may be
2 wheeled for providing wheeled movement. A storage bin is
3 also provided, which is adapted to be affixed to the
4 framework.

5
6 In a framework of attached forward and rearward hollow
7 legs having upper ends, lower ends, handled structure
8 attached to the upper ends and feet each attached to one of
9 the lower ends, the invention also includes associated
10 methods. An exemplary method comprises steps of providing
11 a decorative element, providing at least one of the forward
12 and rearward legs with a window, positioning the decorative
13 element within the one of the forward and rearward legs,
14 and securing the decorative element to the one of the
15 forward and rearward legs so that the decorative element is
16 capable of being viewed through the window. In accordance
17 with a preferred embodiment, the step of providing a
18 decorative element further includes the step of providing a
19 transparent receptacle containing decorative filling.

BRIEF DESCRIPTION OF THE DRAWINGS

Referring to the drawings:

FIG. 1 is an isometric view of ambulatory apparatus comprising a walker including a framework having feet and handles and decorative features, in accordance with the invention;

FIG. 2 is a partially exploded isometric view of the walker of FIG. 1;

FIG. 3 is an enlarged fragmented view of the framework of FIG. 1;

FIG. 4 is a side elevational view of ambulatory apparatus comprising a cane constructed in accordance with another embodiment of the invention;

FIG. 5 is a fragmented side elevational view of the cane of FIG. 4; and

FIG. 6 is an isometric view of another embodiment of a walker including a framework having feet and handles and

1 attached decorative features, in accordance with the
2 invention.

1 DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

2
3 The present invention provides, among other things,
4 new and improved ambulatory apparatus and, more
5 particularly, improved walkers and canes and associated
6 methods of manufacture and assembly. Ensuing embodiments
7 of the invention are of a type used to support a user in
8 going on foot, such as a young children learning to walk,
9 convalescents and those who suffer lasting affects of
10 injury and physical challenges and the elderly.

11
12 Referring to the drawings, FIG. 1 illustrates an
13 isometric view of ambulatory apparatus 10 constructed in
14 accordance with the invention. Apparatus 10 is a walker
15 and is comprised of a framework 11 that supports feet 12 at
16 one end 13 and handles 14 at an opposing end 15. In this
17 embodiment, framework supports four feet 12 and two handles
18 14, and less or more of each may be employed. Feet 12
19 engage the ground or supporting surface and are arranged in
20 a substantially box-like, square or rectangular footprint
21 for providing stability to a user, and a substantially
22 triangular footprint may also be employed. Framework 11
23 defines an upstream end 16 and a downstream end 17.
24 Handles 14 are separated by a distance, reside at

1 approximately the same elevation, are rearwardly directed
2 and are angled downwardly toward end 13. To employ
3 apparatus 10, a user may stand adjacent downstream end 17,
4 grasp handles 14 with his hands and then walk while
5 maneuvering apparatus 10 to provide aid or support during
6 the act of walking. Handles 14 are preferably constructed
7 of a soft, resilient rubber or rubber-like material for
8 providing easy and comfortable gripping. The downward
9 attitude of handles 14 is important as it provides a
10 comfortable and natural angle for gripping and for
11 maneuvering apparatus 10.

12
13 With additional reference to FIG. 2, framework 11 is
14 comprised of forward legs 20 and rearward legs 21. Legs 20
15 and 21 each support one of feet 12. Legs 20 each converge
16 and engage one of legs 21 adjacent end 15. In a preferred
17 embodiment, legs 20 each engage one of legs 21 adjacent end
18 15 for pivotal movement. This allows framework 11 to be
19 collapsed or folded for storage when not in use.
20 Stretchers 22 each pivotally engage one of legs 20 and one
21 of legs 21 for providing structural support adjacent end
22 13. Stretchers 22 are spaced apart, define substantially
23 parallel planes and each collapse or pivot at a midpoint
24 thereof for allowing framework 11 to be collapsed or

1 folded. Rails 23 and 24 connect legs 20 together adjacent
2 end 13 and end 15, respectively.

3

4 Legs 20 each include a segment 20A. Each segment 20A
5 is considered a receptacle and is tubular and constructed
6 of a clear, substantially rigid material such clear
7 plastic, acrylic, polycarbonate, etc. Each segment 20A
8 resides between ends 13 and 15 and contains and holds
9 filling. Figure 3 illustrates one segment 20A as it would
10 appear containing filling 25, which may comprise any one or
11 more of golf tees, candy, decorative fabric, artificial
12 flowers, golf balls, coins, beads, miniature figurines,
13 etc. Filling 25 is preferably loose, and yet it may be
14 bound substantially with adhesive. Because each segment
15 20A is clear, filling 25 can be seen and appreciated by not
16 only the user of apparatus 10 but also onlookers. If
17 desired, the entire length of each leg 21 from end 13 to
18 end 15 or other portions thereof may be constructed of
19 clear, tubular stock filled with a desired filling. One or
20 more of legs 21 and rails 23 and 24 may also be provided
21 with or otherwise constructed of clear, tubular stock
22 filled with a desired filling. The various elements of
23 framework 11 may be assembled with socket, threaded or
24 other suitable mating engagement structure, welding, etc.

Turning to FIG. 4, shown is another embodiment of ambulatory apparatus 30 constructed in accordance with the invention. Apparatus 30 is a cane and is comprised of a framework 31 that supports a foot 32 at one end 33 and a handle 34 at an opposing end 35. Foot 32 is designed to engage the ground or supporting surface and handle 34 is angled downwardly toward foot 32. In operation, a user may grasp handle 34 with one of his hands and then walk while maneuvering apparatus 30 to provide aid or support during the act of walking. Handle 34 is preferably constructed of a soft, resilient rubber or rubber-like material for providing easy and comfortable gripping. The downward attitude of handle 34 is important as it provides a very comfortable and natural angle for gripping and for maneuvering apparatus 30.

Framework 31 is elongate and includes a segment 36. Segment 36 is tubular and constructed of a clear, substantially rigid material such clear plastic, acrylic, polycarbonate, etc. Segment 36 resides between ends 33 and 35 and is provided with filling. Figure 5 illustrates segment 36 as it would appear containing filling 37, which may comprise any one or more of golf tees, candy, decorative fabric, artificial flowers, golf balls, coins,

1 beads, miniature figurines, etc. Because segment 36 is
2 clear, filling 37 can be seen and appreciated by not only
3 the user of apparatus 30 but also onlookers. If desired,
4 the entire length of framework 31 from end 33 to end 35 or
5 other portions thereof may be constructed of clear, tubular
6 stock filled with a desired filling.

7
8 Referring now to FIG. 6, illustrated an isometric view
9 of ambulatory apparatus 50 constructed in accordance with
10 another embodiment of the invention. Apparatus 50 is a
11 walker and is comprised of a framework 51 that supports
12 feet 52 at one end 53 and handles 54 at an opposing end 55.
13 Framework 51 supports four feet 52 and two handles 54, and
14 less or more of each may be employed. In this embodiment,
15 feet 52 are wheels 52A, such as caster wheels, and they
16 engage the ground or supporting surface for wheeled
17 movement and are arranged in substantially box-like, square
18 or rectangular footprint for providing stability to a user,
19 and a substantially triangular footprint may be employed.
20 Feet 52 need not be wheeled, as are feet 12 in the
21 embodiment depicted in FIG. 1, and feet 12 of apparatus 10
22 may be wheeled if desired, as with apparatus 50. Framework
23 51 defines an upstream end 56 and a downstream end 57.
24 Handles 54 are separated by a distance, reside at

1 approximately the same elevation, are rearwardly directed
2 and are angled downwardly toward end 53. To employ
3 apparatus 50, a user may stand adjacent downstream end 57,
4 grasp handles 54 with his hands and then walk while
5 maneuvering apparatus 50 to provide aid or support during
6 the act of walking. Handles 54 are preferably constructed
7 of a soft, resilient rubber or rubber-like material for
8 providing easy and comfortable gripping. The downward
9 attitude of handles 54 is important as it provides a
10 comfortable and natural angle for gripping and for
11 maneuvering apparatus 50. Apparatus 50 is shown equipped
12 with brake apparatus 58 that includes brake handles 59,
13 which are each mounted to framework 51, associated with one
14 of handles 54 and one of two brake mechanisms each
15 operatively associated with one of wheels 52A. By acting
16 on handles 59 and 60, a braking of apparatus 50 is effected
17 at selected ones of wheels 52A. Framework 51 also supports
18 a rearview mirror 60 and a horn 61 at end 55 for
19 convenience of use.

20
21 Framework 51 is an assembly of connected parts and is
22 constructed generally of plastic, metal, wood or any
23 combination thereof or other similar material or
24 combination of materials, whether synthetic or natural.

1 Among its various parts, framework 11 includes forward legs
2 70 and rearward legs 71. Legs 70 and 71 each support one
3 of feet wheels 52A. Legs 70 lead to and engage one of legs
4 71 adjacent end 55. Stretchers 72 each engage one of legs
5 20 and one of legs 21 for providing structural support
6 adjacent end 13 and although two are shown, more may be
7 employed. Rails 73A,73B,73C connect legs 70 together
8 adjacent ends 53 and 55 as shown and although three are
9 shown, less or more may be provided. Depending from and
10 supported by rail 73A is signage 76 for accommodating
11 sensible or other indicia. Framework 51 also supports a
12 storage bin 74, into which items may be stored or otherwise
13 placed as a matter of convenience during use of apparatus
14 50 and even nonuse should one so desire. Bin 74 includes
15 opposing attached legs 75, which depend therefrom and
16 attach to stretchers 72, respectively. Bin 74 is also
17 attached to each of legs 70 and legs 71 for added support.

18
19 Various means may be employed for connecting together
20 the various described parts of framework including welding,
21 glue, male and female engagement pairs, threaded or socket
22 engagement mechanisms, press or friction fittings and even
23 pivotal and/or sliding couplings for allowing framework 51
24 to be collapsed for storage during periods of non use. In

1 order to provide this collapse, stretchers 72 each may be
2 constructed and arranged to pivotally connect to legs 70
3 and 71 and to collapse or pivot at a midpoint thereof.

4
5 Framework 51 supports decorative elements 80. Each
6 decorative element 80 is elongate, embodies ornamentation
7 and provides framework 51 with desirable ornamentation when
8 attached thereto. The term "element" as it is used in
9 conjunction with decorative element 80 does not necessarily
10 denote a single object or thing, but may otherwise comprise
11 a number of objects or things that are either connected to
12 one another or mounted in such a way that they cooperate
13 together in a specific fashion toward a desired functional
14 end.

15
16 The ornamentation of each decorative element 80 may be
17 expressed with one or more of color, texture, drawings or
18 patterns, carvings, figures or shapes, light reflection,
19 etc. Each decorative element 80 may also be provide as a
20 transparent receptacle containing decorative filling as
21 previously explained in connection with apparatus 10. In
22 this embodiment, legs 70, legs 71 and rails 73B,73C each
23 support one decorative element 80 and each of them may be
24 equipped with more if desired, and only one of the

1 foregoing or any combination thereof may be provided with
2 one or more decorative ornaments. Other parts of framework
3 51 may be provided with one or more decorative elements 80
4 in accordance with this disclosure.

5
6 In accordance with a preferred embodiment, legs 70,
7 legs 71 and rails 73B,73C are hollow or are otherwise
8 constructed of tubular stock and are each therefor
9 considered a receptacle. Legs 70, legs 71 and rails
10 73B,73C are each formed or otherwise provided with an
11 opening or window and each is denoted with the reference
12 numeral 81 as a matter of convenience. Windows 81 are each
13 elongate and elongate elements 80 are each positioned
14 within one of legs 70, legs 71 and rails 73B,73C, and are
15 secured so that decorative elements 80 are each capable of
16 being viewed through its respective window 81 as
17 substantially shown. Decorative elements 80 may be
18 assembled with framework 51 during its construction and
19 they may be attached with one or more biased elements, male
20 and female engagement features, threaded engagement
21 features, glue, welding, press fitting, and they may simply
22 float freely therein.

1 In another and preferred embodiment, windows 81 are
2 each of a size sufficient for allowing a user to pass
3 decorative elements 81 therethrough and into place in
4 accordance with this disclosure. After inserting a
5 decorative element through a window and into a receptacle
6 (which comprises any one of legs 70, legs 71 and rails
7 73B,73C), it is preferred that a user need only act on the
8 decorative element with a twisting, compressive or other
9 force that is suitable for causing it to secure thereto
10 with an engagement assembly supported by the decorative
11 element and its associated receptacle, so that such
12 securement may be relieved by reversing the operation for
13 replacement or repair. The engagement assembly may
14 comprise complementary press fittings or ends, threaded
15 engagement pairs, a complementary male and female engagement
16 or socket engagement pairs, a spring-loaded male and
17 complementary detent engagement mechanism, etc. In this
18 regard, apparatus 50 may be provided as a kit of component
19 parts capable of being assembled into the walker as
20 substantially disclosed, including decorative elements 80
21 and framework 51 having windows 81 and opposing footed (a
22 footed end is considered wheeled or non-wheeled) and
23 handled ends as substantially disclosed and adapted to

1 removably accommodate each of decorative elements 81 so
2 that they may be viewed through windows 81.

3
4 The invention has been described above with reference
5 to one or more preferred embodiments. However, those
6 skilled in the art will recognize that changes and
7 modifications, whether known in the art or novel, may be
8 made to the described embodiments without departing from
9 the nature and scope of the invention, and that operations
10 and engagement and complementary engagement pairs may be
11 reversed. Also, the decorative features of the invention
12 as disclosed in the various embodiments may be incorporated
13 into the construction or assembly of crutches, wheelchairs,
14 and other forms of ambulatory apparatus of a type for
15 aiding a user in going on foot or for otherwise personal
16 ambulatory assistance. Accordingly, any such changes and
17 modifications to one or more of the embodiments herein
18 chosen for purposes of illustration are intended to be
19 included within the scope of the invention as assessed only
20 by a fair interpretation of the ensuing claims.

21
22 Having fully described the invention in such clear and
23 concise terms as to enable those skilled in the art to
24 understand and practice the same, the invention claimed is: